

Outcomes of three-piece rigid scleral fixated intraocular lens implantation in patients with deficient posterior capsule following complications in manual small incision cataract surgery

G Nageswar Rao^{a,b*}, Sonu Kumar^{c*}, Nidhi Sinha^b, Bhumika Rath^b and Arttatrana Pal^{c#}

^aDepartment of Ophthalmology, Kalinga Institute of Medical Science, Kalinga Institute of Industrial Technology, Bhubaneswar, Odisha-751024, India

^bVision Care, Center for Retina, Bhubaneswar, Odisha-751024, India

^cDepartment of Zoology, School of Life Sciences, Mahatma Gandhi Central University, Motihari, Bihar 845401, India

E-mail: arttatanapal@mgcub.ac.in

Abstract

Objective: To evaluate the clinical surgical outcomes of scleral fixated intraocular lens implantation in subjects combined with pars plana vitrectomy.

Design: Retrospective 4-year cohort study

Participants: Data from 174 eyes that underwent scleral fixation of IOL combined with PPV between (2018 -2022) were included.

Methods: Demographic baselines characteristics including primary indications for surgery, history of trauma, laterality, baseline and post-best-corrected visual acuity (BCVA), refraction as spherical equivalent (SE), intraocular pressure (IOP), duration of follow-up, and early, late and post-surgical complications were analyzed.

Results: The resulting mean value of preoperative BCVA among subjects was 1.38 ± 0.46 logarithm of the minimum angle of resolution (logMAR), which improved significantly to 0.37 ± 0.22 logMAR. The baseline refractive status measured in spherical equivalent (SE) was 4.1 ± 6.2 Diopters (D), and the postoperative status was -0.4 ± 0.97 D. Early postoperative complications included hypotony (n=1;0.57%), vitreous hemorrhage (n=3;1.72%), elevated IOP (n=8;4.59%), mild dilated pupil (n=1;0.57%) and corneal edema (n=16;9.19%). Late complications included in this study were retinal detachment (n=1;0.57%), cystoid macular edema (CME) (n=1;0.57%), primary glaucoma (n=1;0.57%), secondary glaucoma (n=13;7.47%), , zonular dehiscence (n=3;1.72%), retinal pigment epithelium (RPE) changes (n=3;1.72%), choroidal coloboma (n=2;1.14%), posterior dislocation of posterior chamber IOL (PCIOL) (n=1;0.57%), corneal decompensation (n=1;0.57%), retinal hemorrhage (n=1;0.57%), macular hole (n=1;0.57%), chronic uveitis (n=1;0.57%), mild non-proliferative diabetic retinopathy (NPDR) (n=3;1.72%), and mild NPDR with diabetic macular edema (DME) (n=1;0.57%).

Conclusion: Integrating IOL implantation with pars plana vitrectomy various posterior segment complications was resolved in the same setting without attempting a second surgery.

Keywords: intraocular lens, pars plana vitrectomy, scleral fixation, cataract.